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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

YACOB, SISAY

ART UNIT

PAPER NUMBER

2612

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/761,297

Applicant(s)

SUN, BEN-CHANG

Examiner

Sisay Yacob

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-16 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-11, 13-16 and 22-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1 This communication is in response to applicant's amendment to a first non-final office action, which was filed January 03, 2007.

2 Amendments and arguments to claims 1-26 have been entered and made of record in the application of Sun for "User programmable input apparatus with a keyboard" filed on January 22, 2004.

Claims 1, 2-11, 13-16 and 22-26 are amended.

Claims 12 and 17-21 are canceled.

Claims 1-11, 13-16 and 22-26 are pending.

### **Response to Arguments**

3 Applicant's amendments and arguments with respect to rejected claims 1-11, 13-16 and 22-26 have been fully considered, but are moot in view of the new ground(s) of rejection necessitated by applicant's amendment.

### Rejections - 35 USC § 103

4 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5 The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6 Claims 1, 2, 4, 5, 7-9, 13-16 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent of Shaver et al., (4,964,075) in view of US Patent of Torok (5,458,425).

7 As to claim 1, Shaver et al., discloses a user programmable input apparatus with a keyboard comprising a plurality of keys disposed on the keyboard for input operations (Col. 6, lines 16-34; Item 19 of figures 1b and c; Item 22 of figures 2 and 3), a microprocessor coupled to the plurality of keys for receiving an input from the plurality of keys (Item 30 of figure 3), a nonvolatile memory coupled to the microprocessor (Col.

Art Unit: 2612

**10, lines 27-28; Item 32 of figure 2)** and programmable by operating the plurality of keys (**Col. 10, lines 39-68; Col. 11, lines 1-3**) and a transmission arrangement connected to the microprocessor for outputting data external to the keyboard (**Col. 11, lines 3-8**), wherein the plurality of keys includes a set of special control keys (**Item 25 of figures 2 and 3**) programmable to simulate an output of a conventional keyboard (**Col. 11, lines 20-22**). However, Shaver et al., does not expressly disclose wherein the plurality of keys includes a set of special control keys programmable to simulate a cursor control device, the set of special control keys being programmable to have a different report rate from that of the other of the plurality of keys to coincide with requirements of a cursor control device. In the keyboard for touch type editing field of endeavor, Torok discloses a user programmable keyboard comprising a plurality of keys disposed on the keyboard for input operations (**See figures 3-5**), wherein the plurality of keys includes a set of special control keys programmable to simulate a cursor control device (**Items 59 and 61 of figure 4**), the set of special control keys being programmable to have a different report rate from that of the other of the plurality of keys to coincide with requirements of a cursor control device (**Col. 9, lines 27-38**).

One skilled in the art would have been motivated to combine these in order to have a user programmable input apparatus with a keyboard comprising a plurality of keys disposed on the keyboard for input operations, a microprocessor coupled to the plurality of keys for receiving an input from the plurality of key, a nonvolatile memory coupled to the microprocessor and programmable by operating the plurality of keys, and a transmission arrangement connected to the microprocessor for outputting data

Art Unit: 2612

external to the keyboard, wherein the plurality of keys includes a set of special control keys programmable to simulate a cursor control device, the set of special control keys being programmable to have a different report rate from that of the other of the plurality of keys to coincide with requirements of a cursor control device, because both trying to solve similar problem and Torok suggests the user programmable keyboard could be implemented as a complete keyboard of a single package (**Col. 9, lines 39-46**).

8 As to claim 2, the input apparatus of claim 1, further, Shaver et al., discloses wherein the microprocessor and nonvolatile memory are integrated in a chip (**Col. 10, lines 44-46**).

9 As to claim 4, the input apparatus of claim 1, further, Shaver et al., discloses wherein the nonvolatile memory is programmed with a user programmable hot key (**Col. 8, lines 27-28; Item 25 of figures 2 and 3**).

10 As to claim 5, the input apparatus of claim 1, further, Shaver et al., discloses wherein the nonvolatile memory is programmed with a user programmable data (**Col. 6, lines 24-34**).

11 As to claim 7, the input apparatus of claim 4, further, Shaver et al., discloses wherein the plurality of keys includes a special key to program the hot key (**Col. 8, lines 41-43; Item 27 of figures 2 and 3**).

Art Unit: 2612

12 As to claim 8, the input apparatus of claim 5, further, Shaver et al., discloses wherein the plurality of keys includes a special key to program the data (**Col. 8, lines 27-28; Item 25 of figures 2 and 3**).

13 As to claim 9, the input apparatus of claim 1, further, Shaver et al., discloses wherein the plurality of keys includes a special key to initialize a programming procedure of the nonvolatile memory (**Col. 8, lines 41-43; Item 27 of figures 2 and 3**).

14 As to claim 13, the input apparatus of claim 1, further, Shaver et al., discloses wherein the plurality of keys includes a special key to simulate one of the plurality of keys (**Col. 6, lines 61-68; Col. 7, lines 1-6**).

15 As to claim 14, the input apparatus of claim 13, further, Shaver et al., discloses wherein the special control key has a predetermined report rate different from that of the simulated key (**Col. 11, lines 41-68; Col. 12, lines 1-16**).

16 As to claim 15, the input apparatus of claim 1, further, Shaver et al., discloses wherein the plurality of keys are operated to change a key mapping by programming the nonvolatile memory (**Col. 8, lines 44-48; Col. 9, lines 5-45**).

Art Unit: 2612

17 As to claim 16, the input apparatus of claim 1, further, Shaver et al., discloses wherein the nonvolatile memory is programmed with a command thereto by operating the plurality of keys (**Col. 8, lines 48-57**).

18 As to claim 23, the input apparatus of claim 1, further, Shaver et al., discloses the input apparatus further comprising an application software program executing outside the input apparatus to communicate with the input apparatus (**Col. lines 8, lines 48-60**).

19 As to claim 24, the input apparatus of claim 23, further, Shaver et al., discloses wherein the application software program is used to program the nonvolatile memory (**Col. 8, lines 41-67**).

20 As to claim 25, the input apparatus of claim 23, further, Shaver et al., discloses wherein the application software program is used to perform a function programmed in the nonvolatile memory (**Col. 8, lines 41-67; Col. 9, lines 1-7**).

21 As to claim 26, Shaver et al., discloses a method for operating a user programmable input apparatus with a keyboard (**Col. 6, lines 16-34**), the keyboard having a microprocessor (**Col. 10, lines 27-28**), a nonvolatile memory (**Col. 6, lines 24-34; Col. 10, line 39- Col. 11, line3**) and a transmission arrangement (**Col. 11, lines 4-8**), the keyboard having a plurality of keys and at least one special key (**Item 25 of figures 2 and 3**), the method comprising the steps of detecting a trigger signal of a key



Art Unit: 2612

of the keyboard (**Col. 10, lines 58-64**), storing a first data into the nonvolatile memory when the trigger signal is a programming signal (**Item 27 is moved to a "PROGRAM" mode is a programming signal**), transmitting a normal data corresponding to the trigger signal external to the keyboard by the transmission arrangement when the trigger signal is a normal keying signal (**Item 27 is moved to a "RUN" mode is a normal keying signal**), reading a second data corresponding to a programmed key from the nonvolatile memory and/or executing a function corresponding to the second data when the trigger signal matches the programmed key (**Col. 8, line 41- Col. 9, line 7**), and programming the special key to simulate an output of a conventional keyboard (**Col. 11, lines 20-22**). However, programming the special key to simulate a cursor control device and changing a reporting rate of the special key to be different from that of other of the plurality of keys to coincide with requirements of the cursor control device. In the keyboard for touch type editing field of endeavor, Torok discloses a method for operating a user programmable input apparatus with a keyboard (**See figures 3-5**), and programming the special key to simulate a cursor control device (**Items 59 and 61 of figure 4**) and changing a reporting rate of the special key to be different from that of other of the plurality of keys to coincide with requirements of the cursor control device (**Col. 9, lines 27-38**).

One skilled in the art would have been motivated to combine these in order to have a method for operating a user programmable input apparatus with a keyboard, a microprocessor, a nonvolatile memory and a transmission arrangement, the method comprising the steps of detecting a trigger signal of a key of the keyboard, storing a first

data into the nonvolatile memory when the trigger signal is a programming signal, transmitting a normal data corresponding to the trigger signal external to the keyboard by the transmission arrangement when the trigger signal is a normal keying signal, reading a second data corresponding to a programmed key from the nonvolatile memory and/or executing a function corresponding to the second data when the trigger signal matches the programmed key, and programming the special key to simulate a cursor control device and changing a reporting rate of the special key to be different from that of other of the plurality of keys to coincide with requirements of the cursor control device, because both trying to solve similar problem and Torok suggests the method for operating a user programmable keyboard could be implemented as a complete keyboard of a single package (**Col. 9, lines 39-46**).

22 Claims 3, 6 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent of Shaver et al., (4,964,075) in view of US Patent of Torok (5,458,425) and further in view of US Patent of Kuehneman et al., (4,688,020).

23 As to claim 3, the input apparatus of claim 1, however, the combination of Shaver et al., and Torok does not expressly disclose wherein the nonvolatile memory is programmed with a user programmable password. In same field of endeavor, Kuehneman et al., discloses the nonvolatile memory is programmed with a password to protect a key table for reconfigurable keyboard (**Col. 13, lines 7-15; Col. 14, lines 58-68; Col. 15, lines 1-9; See figure 10**).

It would have been obvious, to one skilled in the art, at the time of the invention, to modify the user programmable input apparatus with a keyboard of Shaver et al., and Torok by incorporating the nonvolatile memory is programmed with a password, as disclosed by Kuehneman et al., in order to have a user programmable input apparatus with a keyboard, wherein the nonvolatile memory is programmed with a user programmable password, because Kuehneman et al., discloses a nonvolatile memory is programmed with a password to protect a key table for reconfigurable keyboard and one skilled in the art realizes incorporating a user programmable password will ensure the program for the input device would not be changed by accident or by unauthorized user.

24 As to claim 6, the input apparatus of claim 3, however, Shaver et al., and Torok does not expressly disclose wherein the plurality of keys includes a special key to program the password. Kuehneman et al., discloses a special key that is a password key (**Col. 10, lines 18-33**).

It would have been obvious, to one skilled in the art, at the time of the invention, to modify the user programmable input apparatus with a keyboard of Shaver et al., Shaver et al., and Torok by incorporating the password key, as disclosed by Kuehneman et al., in order to have a user programmable input apparatus with a keyboard, wherein the plurality of keys includes a special key to program the password, because Shaver et al., discloses a nonvolatile memory is programmed for use with an input device of special keys that may be labeled by the user (**Col. 8, lines 39-67**) and

Art Unit: 2612

Kuehneman et al., discloses a nonvolatile memory is programmed with a password to protect a key table for reconfigurable keyboard and a password key. One skilled in the art realizes having a dedicated special key to program the password to a nonvolatile memory would be desirable to change the user password without changing the program for the rest of programmed keys.

25 As to claim 22, the input apparatus of claim 1, further, Kuehneman et al., discloses the input apparatus further comprising a display connected to the microprocessor to display a content stored in the nonvolatile memory (**Col. 14, lines 58-68; Col. 15, lines 1-9**).

26 Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaver et al., in view of US Patent of Torok (5,458,425) and further in view of US Publication of Criscione (20040041792).

27 As to claims 10 and 11, the input apparatus of claim 1, however, Shaver et al., does not expressly disclose wherein the plurality of keys includes a special key to simulate a mouse and a joystick. In the similar field of endeavor, Criscione discloses a plurality of keys that include special keys to simulate a mouse and a joystick (**Page 1, Par. 0002-0003; Page 2, Par. 0023**).

It would have been obvious, to one skilled in the art, at the time of the invention, to modify the user programmable input apparatus with a keyboard of Shaver et al., by

incorporating the plurality of keys includes a special key to simulate a mouse and a joystick, as disclosed by Criscione, in order to have a user programmable input apparatus with a keyboard, wherein the plurality of keys includes a special key to simulate a mouse and a joystick, because Shaver et al., discloses a nonvolatile memory is programmed for use with an input device of special keys that may replace a regular keyboard by simulating the keyboard keys and control functions and Criscione discloses plurality of keys includes a special key to simulate a mouse and a joystick. One skilled in the art realizes having a special keys incorporated in the programmable input device would minimize the number of hardware devices.

### **Conclusion**

28 Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2612

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

29 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sisay Yacob whose telephone number is (571) 272-8562. The examiner can normally be reached on Monday through Friday 8:00 AM - 4:30 PM.

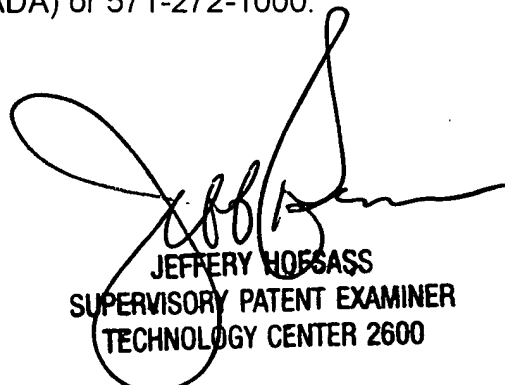
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery A. Hofsass can be reached on (571) 272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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